



UNITED STATES PATENT AND TRADEMARK OFFICE

4/8
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,634	06/29/2001	Khanh Mai	5597	5800

38598 7590 12/19/2005

ANDREWS KURTH L.L.P.
1701 PENNSYLVANIA AVENUE, N.W. SUITE 300
WASHINGTON, DC 20006

EXAMINER

VAUGHN JR, WILLIAM C

ART UNIT PAPER NUMBER

2143

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/893,634

Applicant(s)

MAI ET AL.

Examiner

William C. Vaughn, Jr.

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Action is in regards to the most recent papers received 29 June 2001.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding independent claims 1, (e.g., exemplary independent claim 1), the recitation of "if the attached network is not totally multicast enabled", is unclear and vague. It is unclear of the metes and bounds of what qualifies as being "not totally multicast enabled".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 5-12, 17-24 and 29-36** are rejected under 35 U.S.C. 103(a) as being unpatentable over McCanne, U.S. Patent No. 6,611,872 in view of Nurenberg et al. (Nurenberg), U.S. Patent No. 6,181,697.

6. Regarding **claim 1, 13 and 25**, McCanne discloses the invention substantially as claimed. McCanne discloses *a method of virtual multicasting (VMC) multicast content on non-multicast enabled networks, comprising the steps of: determining if an attached network is multicast*

Art Unit: 2143

enabled, wherein the network includes client computers that have unicast addresses [see McCanne, Col. 7, lines 40-54]. However, McCanne does not explicitly disclose if the attached network is not totally multicast enabled, querying for virtual multicast requests for the multicast content from non-multicast enabled client computers; listening for virtual multicast requests, wherein at least one virtual multicast request includes a unicast address identifying a client computer of the network and a requested method of delivery for the multicast content; and determining, based on the virtual multicast requests, which client computers request the multicast content, from the unicast addresses, and the requested methods of delivery for the multicast content.

7. In the same field of endeavor, Nurenberg discloses (e.g., method for a unicast endpoint client to access a multicast internet protocol session). Nurenberg discloses *if the attached network is not totally multicast enabled, querying for virtual multicast requests for the multicast content from non-multicast enabled client computers [see Nurenberg, abstract, Col. 3, lines 26-65 and Col. 4, lines 1-56]; listening for virtual multicast requests, wherein at least one virtual multicast request includes a unicast address identifying a client computer of the network and a requested method of delivery for the multicast content [see Nurenberg, Col. 5, lines 50-60]; and determining, based on the virtual multicast requests, which client computers request the multicast content, from the unicast addresses, and the requested methods of delivery for the multicast content.*

8. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Nurenberg's teachings of a method for a unicast endpoint client to access a multicast internet protocol session with the teachings of

Art Unit: 2143

McCanne, for the purpose of providing a endpoint client connected to a unicast network the ability to participate in multicast sessions [see Nurenberg, Col. 1, lines 40-51]. By this rationale **claim 1** is rejected.

9. Regarding **claim 5, 17 and 29**, McCanne-Nurenberg discloses further comprising the; steps of: selecting an optimal upstream virtual router; and forwarding a multicast request for the multicast content to the selected upstream virtual router [see McCanne, col. 3, lines 57-67].

10. Regarding **claims 6, 18 and 30**, McCanne-Nurenberg discloses wherein the selecting step comprises the steps of: determining a router load on upstream virtual routers; determining a round trip time on the upstream virtual routers; and balancing the determined router loads and round trip times for the upstream virtual routers, wherein the selecting step selects the upstream virtual router with the best balance of router load and round trip time [see McCanne, Col. 16, lines 58-64].

11. Regarding **claim 7, 19 and 31**, McCanne-Nurenberg discloses wherein the determining if the attached network is multicast enabled comprises the step of: listening for Internet Group Management Protocol (IGMP) queries [see McCanne, Col. 9, lines 23-54]. By this rationale **claim 7** is rejected.

12. Regarding **claim 8, 20 and 32**, McCanne-Nurenberg discloses *wherein the querying step comprises the step of: issuing virtual IGMP (VIGMP) queries, wherein VIGMP queries query client computers for VIGMP reports that request unicast or multicast delivery of the multicast content* [The Examiner takes Official Notice, [MPEP 2144.03]].

13. Regarding **claim 9, 21 and 33**, McCanne-Nurenberg discloses *wherein the VIGMP reports that request unicast delivery of the multicast content include a unicast address for a*

Art Unit: 2143

requesting client computer and a multicast address for the multicast content [see rejection of claim 7, supra].

14. Regarding **claim 10, 22 and 34**, McCanne-Nureberg discloses *wherein the listening step listens for virtual multicast requests from downstream virtual routers* [see rejection of claim 7, supra].

15. Regarding **claim 11, 23 and 35**, McCanne-Nureberg discloses *wherein the listening step listens for virtual multicast requests from downstream virtual routers by listening for Virtual Multicast Registration protocol (VMCRP) reports from the downstream virtual routers* [see rejection of claim 7, supra].

16. Regarding **claim 12, 24 and 36**, McCanne-Nureberg discloses *wherein the VMCRP reports include a unicast address for a requesting downstream virtual router and a multicast address for the multicast content* [see rejection of claim 7, supra]. By this rationale **claim 12** is rejected.

Claim Rejections - 35 USC § 103

17. Claims **2-4, 14-16, 26-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over McCanne-Nureberg as applied to claims 1, 13 and 25 above, and further in view of Zhang et al. (Zhang), U.S. Patent No. 6,741,575.

18. Regarding **claims 2-4, 14-16, 26-28**, McCanne-Nureberg discloses the invention substantially as claimed. However, McCanne-Nureberg does not explicitly disclose further comprising the step of building a table of requesting client computers based on the requesting client computers determined from the determining step.

Art Unit: 2143

19. In the same field of endeavor, Zhang discloses (e.g., apparatus and method for efficient delivery of multicast data). Zhang discloses *further comprising the step of building a table of requesting client computers based on the requesting client computers determined from the determining step* [see Zhang, Col. 7, lines 34-42].

20. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Zhang's teachings of an apparatus and method for efficient delivery of multicast data with the teachings of McCanne-Nurenbeg for the purpose of providing a more efficient way of keeping track of requests within a unicast and multicast environment. By this rationale **claim 2** is rejected.

21. Regarding **claim 3, 15 and 27**, McCanne-Nurenbeg and Zhang discloses further comprising the steps of receiving the multicast content, wherein the multicast content comprises a plurality of packets [see rejection of claim 3, *supra*]; replicating the packets and addressing the packets per the table of requesting client computers; and transmitting the replicated and addressed packets to the requesting client computers.

22. Regarding **claim 4, 16 and 28**, McCanne-Nurenbeg and Zhang discloses wherein: the building step builds a VMC client table (VCT) file that includes the identities of the requesting client computers and the unicast addresses of the requesting clients; and the method further comprises: reading the VCT file for the identities of the requesting client computers and the unicast addresses of the requesting clients, wherein the replicating step addresses the packets per the unicast addresses of the requesting clients [see Zhang, Col. 13, lines 1-13].

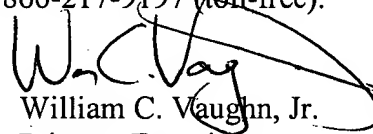
Art Unit: 2143

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Vaughn, Jr. whose telephone number is (571) 272-3922. The examiner can normally be reached on 8:00-6:00, 1st and 2nd Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William C. Vaughn, Jr.
Primary Examiner
Art Unit 2143
07 December 2005

WCV